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ONTARIO
DEPARTMENT OF EDUCATION

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MEMORANDUM TO SECONDARY SCHOOL PRINCIPALS

RE THE GRADE XIII COURSE IN TRIGONOMETRY AND STATICS, 1952-53

Departmental examination results of recent years indicate clearly that a good many teachers are finding difficulty in covering the prescribed course in Trigonometry and Statics in adequate fashion and with time to conduct a satisfactory review of the year's work. This memorandum is issued in the hope that its suggestions may prove helpful in securing this desirable result, assuming a time allotment of a period a day.

It is hardly necessary to point out that, while references are made later to the two text-books in common use, the teacher should constantly bear in mind that the course of study as outlined in Circular H.S. 13 and not any particular text is his guide to the topics to be taught.

A study of "Comments on the Grade XIII paper" for recent years reveals the outstanding needs of the candidates as increased accuracy in calculation, a thorough grasp of fundamental principles in both sections of the course, and familiarity with the experimental basis for the topics in Statics, rather than increased emphasis on facility in the purely manipulative work associated with certain sections of the Trigonometry. The suggestions below, especially item 6, are based on this conclusion.

These suggestions, it should be pointed out, are intended to assist the teacher to cover the essentials of the course in adequate fashion with the average student but are not intended to narrow the field of study of the pupil of superior ability. The latter, and particularly, of course, the scholarship candidate, must interpret the prescription of the course as widely as his time permits.

1. Care should be taken that suitable time is reserved for the study of Statics. This entails a thoughtful time-tabling of the year's work and a determined effort to adhere to the time allotted the various topics. It follows that a beginning in the work on Statics must not be too long deferred. Some teachers, rather than waiting until the conclusion of the course in Trigonometry proper, begin the Statics, say two periods a week, soon after Christmas.

2. The matter of "good form" should receive day-by-day attention and not be confined to admonitions at the close of the year, when bad habits have become ingrained in certain students.

3. Review of what is, perhaps, the fundamental topic of the course in Trigonometry—solution of triangles by the use of logarithms—should be spread over as long a time as possible, by periodic practice with typical examples, so that pupils may become thoroughly familiar with the formulas appropriate to the various cases and the mechanical use of the logarithmic tables.

4. The basic principles involved in calculations with approximate numbers should be introduced in the earlier years of the High School course in Mathematics so that the Grade XIII student is already familiar with at least the elements of this topic. Teachers of Mathematics and Science in the lower grades must share this responsibility.

5. The more difficult examples in many of the exercises, as well as most of those in the sets specifically marked for review, may be reserved for a second coverage of the work. This remark might apply also to certain sub-topics, such as the functinons of 3A in terms of those of A and the more involved problems in heights and distances in more than one plane. Here again an accurate time-tabling is assumed.

6. It is suggested that, without sacrificing any of the items of the course of study as at present outlined, teachers may save up to ten periods of classroom time by lessening their emphasis on purely manipulative exercises. The list on the back of this page, with specific references to the texts in common use, is furnished as a guide to their judgment regarding those examples which might well be omitted with the majority of students. Teachers are assured that questions such as those listed will not appear on the 1953 Departmental examination paper in Trigonometry and Statics. This restriction does not, of course, apply to the Problems paper.

J. G. Althouse

TORONTO, September 1, 1952.

Chief Director.

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